

Eclipse Plug-in Development Research Project

Report 14



UNIVERSITY AT BUFFALO

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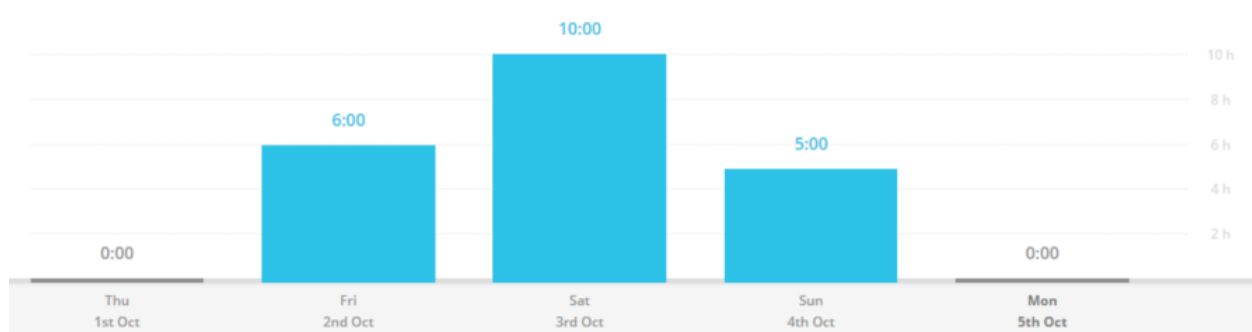
Report 14

Introduction

This is also another big update since last meeting. I successfully incorporated SQLite database into the project. Woohoo!

Synopsis









I will fill in the previous extra 4 hours from last week's report into this week's timesheet (9/24/2015 - 10/7/2015) so it will be 10 hours for week (9/24/2015 - 9/30/2015) and 15 hours for week (10/1/2015 - 10/7/2015)



Eclipse Plugin	21:00:00
Implementing SQLite into project	10:00:00
Studying SQLite	6:00:00
Updating and testing	5:00:00

Content

This week, I incorporate SQLite database into the project. That means, now it will not only produce 2 text files but also a db file.

	.settings	10/2/2015 9:32 PM	File folder	
	bin	10/4/2015 12:46 PM	File folder	
	src	10/2/2015 9:32 PM	File folder	
	.classpath	8/21/2015 1:47 PM	CLASSPATH File	1 KB
	.project	8/21/2015 1:47 PM	PROJECT File	1 KB
<input checked="" type="checkbox"/> 	.sqlite	10/4/2015 2:33 PM	Data Base File	10 KB
<input checked="" type="checkbox"/> 	.Tester	10/4/2015 2:33 PM	RECORDING File	7 KB
<input checked="" type="checkbox"/> 	.Tester_source	10/4/2015 2:32 PM	RECORDING File	2 KB

For now, I will use these two recorded methods (text based and database based) to see which one will be better in terms of data analysis. Inside the .sqlite database file, there are 4 tables : main_event, compilation_unit, error, and source_file. I think categorizing in this way is beneficial when analyzing data, but of course, if this is no any good, I will change it. I use SQLiteBrowser to view the tables and data. See the screenshots below:

➤ main_event table:

id	time_stamp	event	description
Filter	Filter	Filter	Filter
1	2015-10-04 14:12:48	Plugin Initialized	SampleProject
2	2015-10-04 14:12:48	PackageFragment Added	samplepackage
3	2015-10-04 14:12:58	CompilationUnit Added	SampleClass1.java
4	2015-10-04 14:12:59	CompilationUnit Changed	samplepackage.SampleClass1
5	2015-10-04 14:12:59	Source File Initialized	samplepackage.SampleClass1
6	2015-10-04 14:13:04	CompilationUnit Edited	samplepackage.SampleClass1
7	2015-10-04 14:13:07	CompilationUnit Edited	samplepackage.SampleClass1
8	2015-10-04 14:13:12	CompilationUnit Edited	samplepackage.SampleClass1
9	2015-10-04 14:13:15	CompilationUnit Error	samplepackage.SampleClass1
10	2015-10-04 14:13:19	CompilationUnit Edited	samplepackage.SampleClass1
11	2015-10-04 14:13:21	CompilationUnit Edited	samplepackage.SampleClass1
12	2015-10-04 14:13:30	CompilationUnit Edited	samplepackage.SampleClass1
13	2015-10-04 14:13:32	CompilationUnit Error	samplepackage.SampleClass1
14	2015-10-04 14:13:37	CompilationUnit Edited	samplepackage.SampleClass1
15	2015-10-04 14:13:42	CompilationUnit Edited	samplepackage.SampleClass1
16	2015-10-04 14:13:50	CompilationUnit Edited	samplepackage.SampleClass1
17	2015-10-04 14:14:03	CompilationUnit Error	samplepackage.SampleClass1
18	2015-10-04 14:14:08	CompilationUnit Error	samplepackage.SampleClass1
19	2015-10-04 14:14:12	CompilationUnit Edited	samplepackage.SampleClass1

➤ compilation_unit table:

cu_id	time_stamp	class_name	line_diff	description
Filter	Filter	Filter	Filter	Filter
1	2015-10-04 14:13:04	samplepackage.SampleClass1	[+] int a;	[ADDED] 5 \$ [FIELD_DECLARATION] (int) (a)
2	2015-10-04 14:13:07	samplepackage.SampleClass1	[+] int b;	[ADDED] 6 \$ [FIELD_DECLARATION] (int) (b)
3	2015-10-04 14:13:12	samplepackage.SampleClass1	[+] public void method(){ [+] }	[ADDED] 8 \$ [METHOD_DECLARATION] keyword (public) con (false) (void) (method) [ADDED] 8 \$ OPEN [METHOD_DECLARATION]
4	2015-10-04 14:13:19	samplepackage.SampleClass1	[+] int a=0;	[ADDED] 9 \$ [VARIABLE_DECLARATION_STATEMENT] (int) (a) [ADDED] 9 \$ CLOSE [METHOD_DECLARATION]
5	2015-10-04 14:13:21	samplepackage.SampleClass1	[+] int b;	[REMOVED] 6 \$ [FIELD_DECLARATION] (int) (b)
6	2015-10-04 14:13:30	samplepackage.SampleClass1	[+] public SampleClass1(){ [+] }	[ADDED] 11 \$ [METHOD_DECLARATION] keyword (public) constructor (true) (SampleClass1)
7	2015-10-04 14:13:37	samplepackage.SampleClass1	[+] System.out.println();	[ADDED] 12 \$ [QUALIFIED_NAME] (System) (out) (println)
8	2015-10-04 14:13:42	samplepackage.SampleClass1	[+] System.out.println("Hello World"); [+] System.out.println();	[ADDED] 12 \$ [QUALIFIED_NAME] (System) (out) (println) (' World') [REMOVED] 12 \$ [QUALIFIED_NAME] (System) (out) (println)
9	2015-10-04 14:13:50	samplepackage.SampleClass1	[+] method();	[ADDED] 12 \$ [METHOD_INVOCATION] (method)
10	2015-10-04 14:14:12	samplepackage.SampleClass1	[+] public boolean method(){ [+] return true; [+] boolean x=method(); [+] public void method(){ [+] method();	[ADDED] 7 \$ [METHOD_DECLARATION] keyword (public) con (false) (boolean) (method) [ADDED] 10 \$ [RETURN_STATEMENT] booleanValue (true) [ADDED] 14 \$ [VARIABLE_DECLARATION_STATEMENT] (boolean) (method) [REMOVED] 7 \$ [METHOD_DECLARATION] keyword (public)

➤ error table:

error_id	time_stamp	class_name	error_message
Filter	Filter	Filter	Filter
1	2015-10-04 14:13:15	samplepackage.SampleClass1	9 * Syntax error, insert "VariableDeclarators" to complete LocalVariableDeclaration 9 * Syntax error, insert ";" to complete BlockStatements 9 * x cannot be resolved to a type
2	2015-10-04 14:13:32	samplepackage.SampleClass1	12 * Syntax error, insert "new ClassType ()" to complete Expression 12 * Syntax error, insert ";" to complete BlockStatements
3	2015-10-04 14:14:03	samplepackage.SampleClass1	12 * Type mismatch: cannot convert from void to boolean
4	2015-10-04 14:14:08	samplepackage.SampleClass1	7 * This method must return a result of type boolean
5	2015-10-04 14:14:40	samplepackage.SampleClass2	5 * Syntax error, insert "Identifier (" to complete MethodHeaderName 5 * Syntax error, insert ")" to complete MethodDeclaration 5 * Syntax error, insert ";" to complete ClassBodyDeclarations
6	2015-10-04 14:14:47	samplepackage.SampleClass2	5 * ArrayList cannot be resolved to a type 5 * Syntax error, insert "(" to complete Expression 5 * Syntax error, insert ";" to complete ClassBodyDeclarations
7	2015-10-04 14:14:49	samplepackage.SampleClass2	5 * ArrayList cannot be resolved to a type 5 * ArrayList cannot be resolved to a type
8	2015-10-04 14:14:50	samplepackage.SampleClass2	5 * ArrayList cannot be resolved to a type 5 * ArrayList cannot be resolved to a type

➤ source_file table:

source_id	time_stamp	class_name	source
Filter	Filter	Filter	Filter
1	2015-10-04 14:12:59	samplepackage.SampleClass1	package samplepackage; public class SampleClass1 { }
2	2015-10-04 14:14:30	samplepackage.SampleClass2	package samplepackage; public class SampleClass2 { }
3	2015-10-04 14:21:17	samplepackage.SampleClass1	package samplepackage; public class SampleClass1 { int a; public boolean method(){ int a=0; return true; } public SampleClass1(){ boolean enabled=method(); System.out.println("Class is removed! "); } }

I decided to bring back the printing source file in every ? min. (the current one is 5 min)

Conclusion

I have been testing out a lot and this is the best solution I come out with. At first, I was thinking to use MySQL for storing data, but then I realize that setting up MySQL is not an ideal solution as it will require the permission of software installation and things like that, plus, we are dealing with smaller projects. After researching for some time, I decided to use SQLite database and it is awesome!

I guess that's pretty much it! Hope you guys like it too!

Thanks in advance!